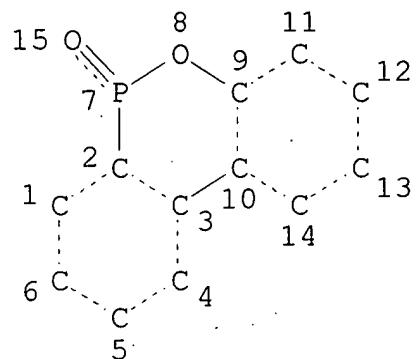


FILE 'HCAPLUS' ENTERED AT 11:10:24 ON 24 APR 2006  
L8 14 S L4(L) RACT+NT/RL AND L7(L) PREP+NT/RL

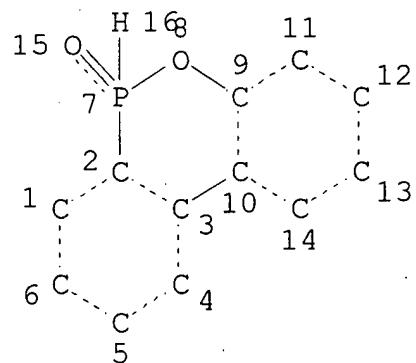
FILE 'REGISTRY' ENTERED AT 11:12:36 ON 24 APR 2006

FILE 'REGISTRY' ENTERED AT 11:12:55 ON 24 APR 2006

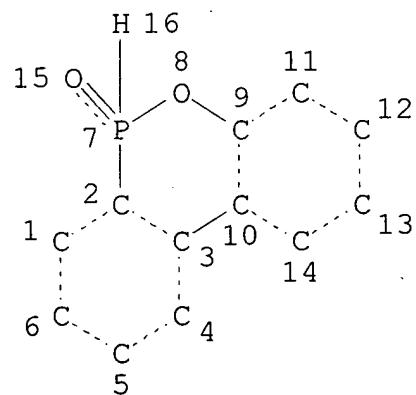
=> str 11  
:dis



:att 7 h vn se  
:dis



:mov 16 u2,dis



:end

L9 STRUCTURE CREATED

=> s 19 sub=14 sam

SAMPLE SUBSET SEARCH INITIATED 11:14:02 FILE 'REGISTRY'

SAMPLE SUBSET SCREEN SEARCH COMPLETED - 99 TO ITERATE

100.0% PROCESSED 99 ITERATIONS

9

ANSWERS

SEARCH TIME: 00.00.01

PROJECTIONS (WITHIN SPECIFIED SUBSET): ONLINE \*\*COMPLETE\*\*

PROJECTED ITERATIONS (WITHIN SPECIFIED SUBSET): 1384 TO

2576

PROJECTED ANSWERS (WITHIN SPECIFIED SUBSET): 9 TO

360

L10 9 SEA SUB=L4 SSS SAM L9

=> s 19 sub=14 full

FULL SUBSET SEARCH INITIATED 11:14:10 FILE 'REGISTRY'

FULL SUBSET SCREEN SEARCH COMPLETED - 1846 TO ITERATE

100.0% PROCESSED 1846 ITERATIONS

127

ANSWERS

SEARCH TIME: 00.00.01

L11 127 SEA SUB=L4 SSS FUL L9

=> b hcap

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

40.28

645.29

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

ENTRY

SESSION

CA SUBSCRIBER PRICE

0.00

-10.50

FILE 'HCAPLUS' ENTERED AT 11:14:15 ON 24 APR 2006

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PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

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FILE COVERS 1907 - 24 Apr 2006 VOL 144 ISS 18  
FILE LAST UPDATED: 23 Apr 2006 (20060423/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> l11 (1)ract+nt/rl and 17(1)prep+nt/rl

L11 IS NOT A RECOGNIZED COMMAND

The previous command name entered was not recognized by the system. For a list of commands available to you in the current file, enter "HELP COMMANDS" at an arrow prompt (=>).

=> s l11 (1)ract+nt/rl and 17(1)prep+nt/rl

582 L11

2845537 RACT+NT/RL (10 TERMS)

168 L11 (L) RACT+NT/RL

165 L7

3456277 PREP+NT/RL (18 TERMS)

61 L7 (L) PREP+NT/RL

L12 10 L11 (L) RACT+NT/RL AND L7 (L) PREP+NT/RL

=> d ibib abs hitstr 112 tot

L12 ANSWER 1 OF 10 HCPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2006:293401 HCPLUS

DOCUMENT NUMBER: 144:332992

TITLE: Fireproofing finishes containing phosphonic acid esters and manufacture of fire-resistant

fibers using

them

INVENTOR(S): Kobayashi, Junichi; Ishikawa, Akira;

Kanehira, Ryoji

PATENT ASSIGNEE(S): Marubishi Oil Chemical Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 20 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.
DATE	-----	-----	-----
-----	-----	-----	-----
JP 2006083491 20040916	A2	20060330	JP 2004-270028

PRIORITY APPLN. INFO.:  
20040916

JP 2004-270028

AB The finishes contain  $RC_6H_4OQ$  [I; R = H, (un)substituted hydrocarbyl; Q = 9,10-dihydro-10-oxo-9-oxa-10-phosphaphenanthren-10-yl] and are contacted

to fibers to give the fire-resistant fibers. Manufacture of I by reaction of

9,10-dihydro-9-oxa-10-phosphaphenanthrene 10-oxide (II) with halogen

compds. in the presence of amines and dehydrohalogenation reaction of the

resulting  $XQ$  (X = halo) with  $RC_6H_4OH$  is also claimed. Thus, 30.8 g  $CCl_4$

was added dropwise to  $CH_2Cl_2$  containing II 32.4, phenol 14.1, and  $Et_3N$  17.2 g

at  $\leq 15^\circ$  and stirred for 1 h to give 43.5 g I (R = H), 40 parts of which was added to a mixture of polyoxyethylene distyrenated phenol

ether sulfate 5, 10% aqueous CM-cellulose solution 2, and  $H_2O$  53 parts and

dispersed to give a fireproofing finish. A 90/10 regular polyester/cationic dyeable polyester fabric was padded with a liquid containing

20% of the finish, dried, heat-set, washed with soda ash, and dried to

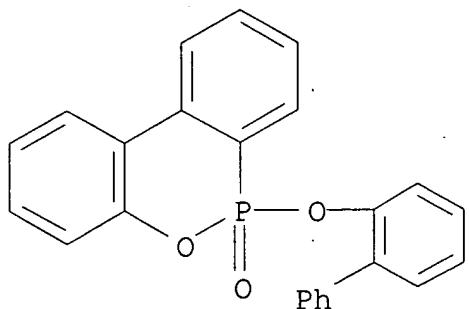
show good fire resistance even after washing or dry cleaning.

IT 36240-30-9P 55217-59-9P, 6-Phenoxy-6H-Dibenz[c,e][1,2]oxaphosphorin-6-oxide 880138-78-3P, 6-(3-Methylphenoxy)-6H-Dibenz[c,e][1,2]oxaphosphorin-6-oxide 880138-79-4P, 6-(4-tert-Butylphenoxy)-6H-Dibenz[c,e][1,2]oxaphosphorin-6-oxide 880138-80-7P, 6-(4-n-Octylphenoxy)-6H-Dibenz[c,e][1,2]oxaphosphorin-6-oxide  
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PRP (Properties); PREP (Preparation); USES (Uses)  
(fireproofing finishes based on phosphonic acid esters with good

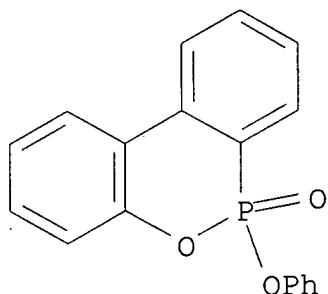
washfastness)

RN 36240-30-9 HCPLUS

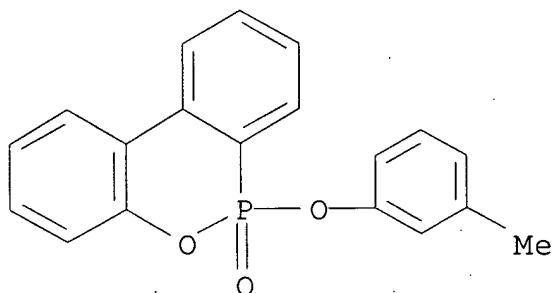
CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 6-((1,1'-biphenyl)-2-yloxy)-, 6-oxide  
(9CI) (CA INDEX NAME)



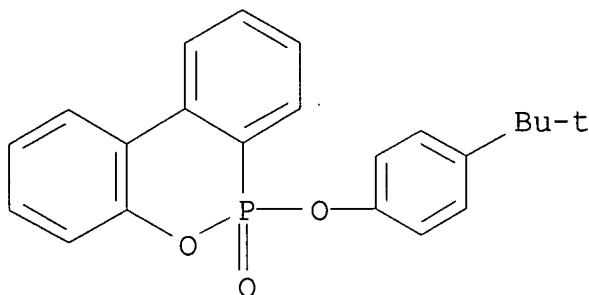
RN 55217-59-9 HCPLUS  
CN 6H-Dibenzo[c,e][1,2]oxaphosphorin, 6-phenoxy-, 6-oxide (9CI) (CA  
INDEX  
NAME)



RN 880138-78-3 HCPLUS  
CN 6H-Dibenzo[c,e][1,2]oxaphosphorin, 6-(3-methylphenoxy)-, 6-oxide  
(9CI)  
(CA INDEX NAME)

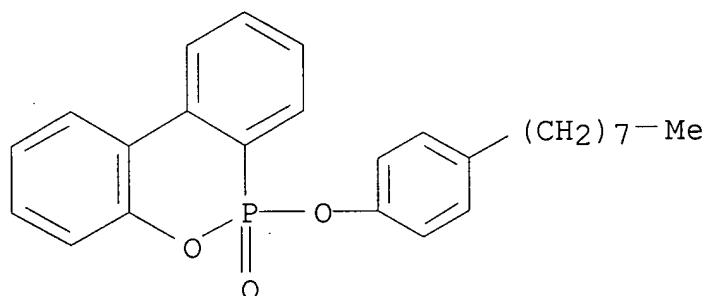


RN 880138-79-4 HCPLUS  
CN 6H-Dibenzo[c,e][1,2]oxaphosphorin,  
6-[4-(1,1-dimethylethyl)phenoxy]-,  
6-oxide (9CI) (CA INDEX NAME)



RN 880138-80-7 HCPLUS

CN 6H-Dibenzo[c,e][1,2]oxaphosphorin, 6-(4-octylphenoxy)-, 6-oxide  
(9CI) (CA  
INDEX NAME)



IT 35948-25-5, 9,10-Dihydro-9-oxa-10-phosphaphhenanthrene 10-oxide

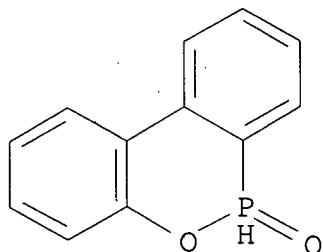
RL: RCT (Reactant); RACT (Reactant or reagent)

(fireproofing finishes based on phosphonic acid esters with  
good

washfastness)

RN 35948-25-5 HCPLUS

CN 6H-Dibenzo[c,e][1,2]oxaphosphorin, 6-oxide (9CI) (CA INDEX NAME)



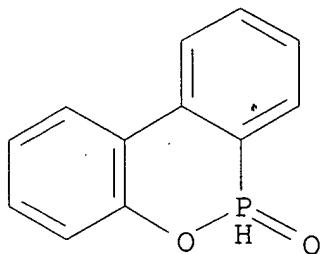
L12 ANSWER 2 OF 10 HCPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:141621 HCPLUS

DOCUMENT NUMBER: 143:172925

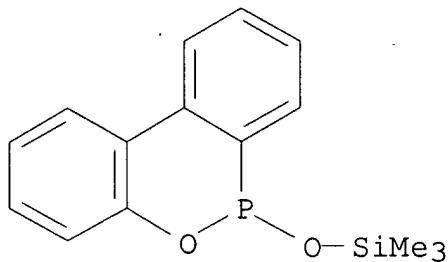
TITLE: Arylation of  
6H-dibenzo[c,e][1,2λ5]oxaphosphini

ne 6-oxide  
 AUTHOR(S): Beletskaya, I. P.; Neganova, E. G.; Veits,  
 Yu. A.  
 CORPORATE SOURCE: Faculty of Chemistry, Lomonosov Moscow State  
 University, Moscow, 119992, Russia  
 SOURCE: Russian Journal of Organic Chemistry (2004),  
 40(12), 1782-1786  
 PUBLISHER: MAIK Nauka/Interperiodica Publishing  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 143:172925  
 AB Arylation and alkylation of 6H-dibenzo[c,e][1,2λ5]oxaphosphinine  
 6-oxide at the phosphorus atom was accomplished.  
 Tetrafluoro-4-pyridyl  
 fragment was introduced via reaction of 6-trimethylsiloxy-6H-  
 dibenzo[c,e][1,2]oxaphosphinine with pentafluoropyridine. The  
 arylation  
 of the title compound with aryl iodides containing both  
 electron-acceptor and  
 electron-donor substituents was effected under catalysis by  
 palladium or  
 nickel complexes.  
 IT 35948-25-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (palladium or nickel catalyzed arylation of  
 dibenzooxaphosphinine  
 oxide)  
 RN 35948-25-5 HCPLUS  
 CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 6-oxide (9CI) (CA INDEX NAME)



IT 861105-63-7P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
 (Preparation); RACT (Reactant or reagent)  
 (palladium or nickel catalyzed arylation of  
 dibenzooxaphosphinine  
 oxide)  
 RN 861105-63-7 HCPLUS  
 CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 6-[(trimethylsilyl)oxy]- (9CI)  
 (CA)

INDEX NAME)



REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES  
AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
RE FORMAT

L12 ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 2005:140870 HCAPLUS  
DOCUMENT NUMBER: 142:198207  
TITLE: Process for the preparation of  
9,10-dihydro-9-oxa-10-  
derivatives of  
INVENTOR(S): Dittrich, Uwe; Just, Berthold; Doring,  
Manfred;  
Ciesielski, Michael  
PATENT ASSIGNEE(S): Germany  
SOURCE: U.S. Pat. Appl. Publ., 12 pp.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.
DATE			
-----	----	-----	-----
US 2005038279 20040813	A1	20050217	US 2004-918838
DE 10338116 20030815	A1	20050317	DE 2003-10338116
EP 1512690 20040809	A1	20050309	EP 2004-18829
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR			
PRIORITY APPLN. INFO.: 20030815		DE 2003-10338116	A

OTHER SOURCE(S): CASREACT 142:198207; MARPAT 142:198207

AB A process is provided for the preparation of

9,10-dihydro-9-oxa-10-

organophosphaphenanthrene 10-oxide and derivs. of same substituted on the

Ph groups, in which: (a)

9,10-dihydro-9-oxa-10-phosphaphenanthrene

10-oxide (DOP) or a derivative of same is reacted in the presence of at least

one mono- or polyhydric alc. with at least one ortho ester with formation

of a first intermediate product, (b) the intermediate product from step

(a) is optionally reacted with at least one further mono- or polyhydric

alc. with formation of a further intermediate product and (c) the intermediate product from steps (a) or (b) is transformed by addition of

catalytic quantities of alkylation agent into

9,10-dihydro-9-oxa-10-

organophosphaphenanthrene 10-oxide or a derivative of same substituted on the

Ph groups.

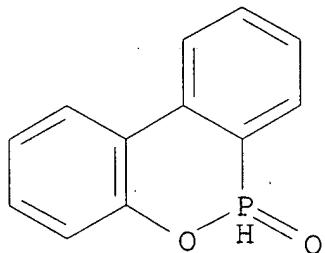
IT 35948-25-5, 9,10-Dihydro-9-oxa-10-phosphaphenanthrene-10-oxide

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of substituted Ph group derivs. of dihydro oxaorganophosphaphenanthrene oxide useful as flame retardants)

RN 35948-25-5 HCPLUS

CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 6-oxide (9CI) (CA INDEX NAME)



IT 37632-28-3P 194091-96-8P

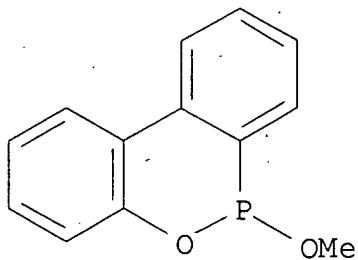
RL: RCT (Reactant); SPN (Synthetic preparation); PREP

(Preparation); RACT (Reactant or reagent)

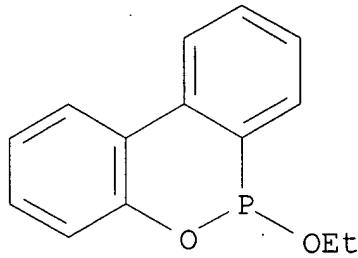
(preparation of substituted Ph group derivs. of dihydro oxaorganophosphaphenanthrene oxide useful as flame retardants)

RN 37632-28-3 HCPLUS

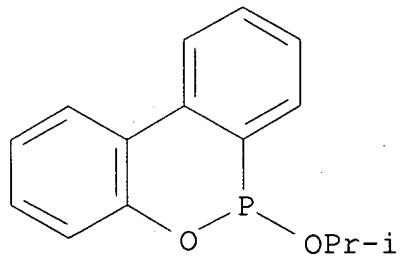
CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 6-methoxy- (9CI) (CA INDEX NAME)



RN 194091-96-8 HCPLUS  
 CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 6-ethoxy- (9CI) (CA INDEX  
 NAME)



IT 585573-01-9P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of substituted Ph group derivs. of dihydro  
 oxaorganophosphaphenanthrene oxide useful as flame retardants)  
 RN 585573-01-9 HCPLUS  
 CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 6-(1-methylethoxy)- (9CI) (CA  
 INDEX  
 NAME)



L12 ANSWER 4 OF 10 HCPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2005:135413 HCPLUS  
 DOCUMENT NUMBER: 142:198206  
 TITLE: Process for the preparation of  
 9,10-dihydro-9-oxa-10-  
 derivatives of organophosphaphenanthrene 10-oxide and

INVENTOR(S): the same substituted on the phenyl groups  
 Manfred; Dittrich, Uwe; Just, Berthold; Doering,  
  
 PATENT ASSIGNEE(S): Ciesielski, Michael  
 Aktiengesellschaft, Schill & Seilacher "struktol"  
  
 SOURCE: Germany  
 EUR. Pat. Appl., 19 pp.  
 CODEN: EPXXDW  
  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
  
 FAMILY ACC. NUM. COUNT: 1  
  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.
DATE			
EP 1506968 20040809	A1	20050216	EP 2004-18830
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, PL, SK, HR			
DE 10338131 20030815	A1	20050317	DE 2003-10338131
US 2005038278 20040813	A1	20050217	US 2004-918836
PRIORITY APPLN. INFO.:			DE 2003-10338131 A
20030815			

OTHER SOURCE(S): CASREACT 142:198206; MARPAT 142:198206  
 AB A process is provided for the preparation of  
 9,10-dihydro-9-oxa-10-  
 organophosphaphenanthrene 10-oxide and derivs. of same  
 substituted on the  
 Ph groups, in which: (a)  
 9,10-dihydro-9-oxa-10-phosphaphenanthrene  
 10-oxide (DOP) or a derivative of same is reacted in the  
 presence of at least  
 one mono- or polyhydric alc. with at least one ortho ester with  
 formation  
 of a first intermediate product, (b) the intermediate product  
 from step  
 (a) is optionally reacted with at least one further mono- or  
 polyhydric  
 alc. with formation of a further intermediate product and (c) the  
 intermediate product from steps (a) or (b) is transformed by  
 addition of  
 catalytic quantities of alkylation agent into  
 9,10-dihydro-9-oxa-10-  
 organophosphaphenanthrene 10-oxide or a derivative of same  
 substituted on the

Ph groups.

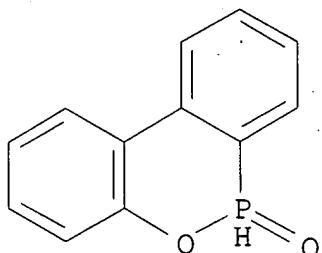
IT 35948-25-5, 9,10-Dihydro-9-oxa-10-phosphaphenanthrene-10-oxide

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of substituted Ph group derivs. of dihydro  
oxaorganophosphaphenanthrene oxide useful as flame retardants)

RN 35948-25-5 HCPLUS

CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 6-oxide (9CI) (CA INDEX NAME)



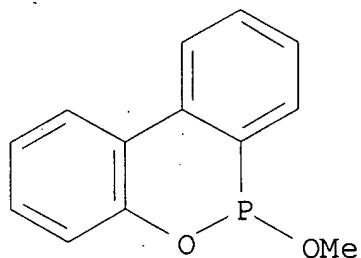
IT 37632-28-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
(Preparation); RACT (Reactant or reagent)

(preparation of substituted Ph group derivs. of dihydro  
oxaorganophosphaphenanthrene oxide useful as flame retardants)

RN 37632-28-3 HCPLUS

CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 6-methoxy- (9CI) (CA INDEX  
NAME)



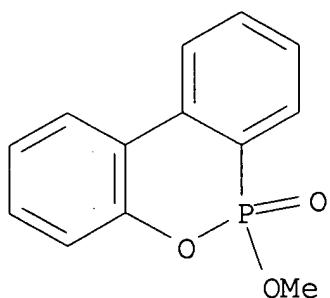
IT 103764-64-3P 194091-96-8P 585573-01-9P

RL: SPN (Synthetic preparation); PREP (Preparation)

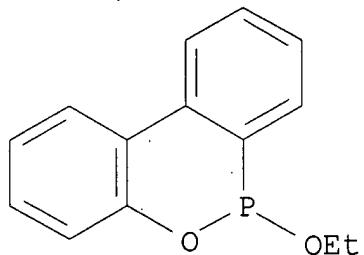
(preparation of substituted Ph group derivs. of dihydro  
oxaorganophosphaphenanthrene oxide useful as flame retardants)

RN 103764-64-3 HCPLUS

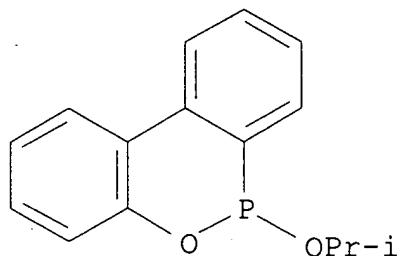
CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 6-methoxy-, 6-oxide (9CI) (CA  
INDEX  
NAME)



RN 194091-96-8 HCPLUS  
CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 6-ethoxy- (9CI) (CA INDEX  
NAME)



RN 585573-01-9 HCPLUS  
CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 6-(1-methylethoxy)- (9CI) (CA  
INDEX  
NAME)

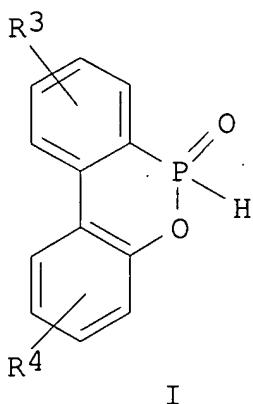


REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
RE FORMAT

L12 ANSWER 5 OF 10 HCPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 2003:678817 HCPLUS  
DOCUMENT NUMBER: 139:197621  
TITLE: Method for producing  
6-alkoxy- (6H)-dibenz[c,e][1,2]-

INVENTOR(S): oxaphosphorins  
 Kollann, Sprenger, Stephan; Ciesielski, Michael;  
  
 PATENT ASSIGNEE(S): Carsten; Doering, Manfred  
 Forschungszentrum Karlsruhe G.m.b.H., Germany  
 SOURCE: PCT Int. Appl., 24 pp.  
 CODEN: PIXXD2  
  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.
DATE			
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WO 2003070736 20030212	A1	20030828	WO 2003-EP1368
W: JP, US RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR DE 10206982	A1	20030904	DE 2002-10206982
20020220	B4	20040325	
DE 10206982 EP 1476453	A1	20041117	EP 2003-702624
20030212	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, CY, TR, BG, CZ, EE, HU, SK JP 2005517740	T2	20050616
			JP 2003-569643
20030212	US 2005176983	A1	20050811
20030212	PRIORITY APPLN. INFO.: 20020220		DE 2002-10206982
			A
20030212	OTHER SOURCE(S): GI		WO 2003-EP1368
			W
			CASREACT 139:197621; MARPAT 139:197621



I

AB The invention relates to a method for producing 6-alkoxy-(6H)-dibenz[c,e][1,2]-oxaphosphorins, whereby 6H-dibenz[c,e][1,2]-oxaphosphorin-6-oxides I (R3, R4 = alkyl, alkoxy, alkylthio, alkenyl, alkynyl, aryl, heteroaryl, cycloalkyl) are used as adduct. Thus, reaction of 6H-dibenz[c,e][1,2]-oxaphosphorin 6-oxide with HCl in methanol at 85° for 45 min followed by treatment with concentrate HCl for 5 h and

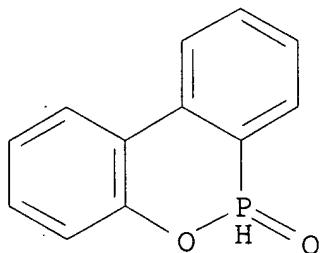
tri-Me orthoformate for 30 min gave 87% 6-methoxy-6H-dibenz[c,e][1,2]-oxaphosphorin.

IT 35948-25-5, 6H-Dibenz[c,e][1,2]-oxaphosphorin 6-oxide  
RL: RCT (Reactant); RACT (Reactant or reagent)

(method for producing alkoxydibenzoxaphosphorins starting from dibenzoxaphosphorin oxides)

RN 35948-25-5 HCPLUS

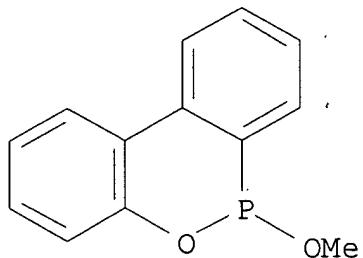
CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 6-oxide (9CI) (CA INDEX NAME)



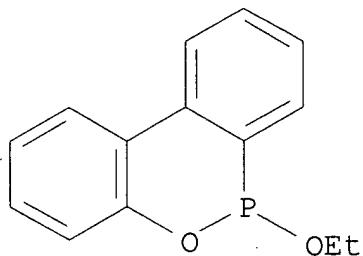
IT 37632-28-3P, 6-Methoxy-6H-dibenz[c,e][1,2]-oxaphosphorin  
194091-96-8P, 6-Ethoxy-6H-dibenz[c,e][1,2]-oxaphosphorin  
585573-01-9P, 6-Isopropoxy-6H-dibenz[c,e][1,2]-oxaphosphorin  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(method for producing alkoxydibenzoxaphosphorins starting from dibenzoxaphosphorin oxides)

RN 37632-28-3 HCPLUS

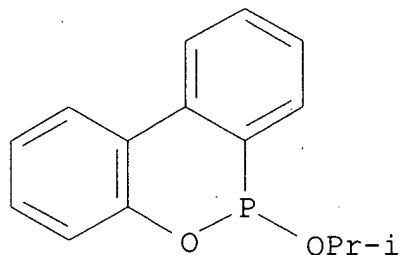
CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 6-methoxy- (9CI) (CA INDEX  
NAME)



RN 194091-96-8 HCPLUS  
CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 6-ethoxy- (9CI) (CA INDEX  
NAME)



RN 585573-01-9 HCPLUS  
CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 6-(1-methylethoxy)- (9CI) (CA  
INDEX  
NAME)



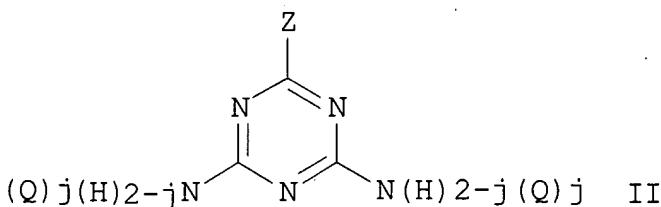
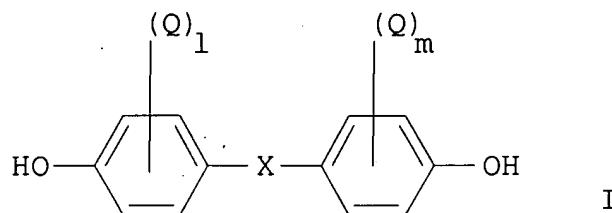
REFERENCE COUNT:  
FOR THIS  
RE FORMAT

3 THERE ARE 3 CITED REFERENCES AVAILABLE  
RECORD. ALL CITATIONS AVAILABLE IN THE

L12 ANSWER 6 OF 10 HCPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 2003:274797 HCPLUS

DOCUMENT NUMBER: 138:288481  
TITLE: Phosphorus-containing fire-resistant curing  
agents and  
cured epoxy  
resins, advanced epoxy resins, and  
resins containing them  
INVENTOR(S): Wang, Chun Shan; Hsieh, Cheng Yueh; Lin,  
Ching Yuan  
PATENT ASSIGNEE(S): Taiwan  
SOURCE: Jpn. Kokai Tokkyo Koho, 29 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

DATE	PATENT NO.	KIND	DATE	APPLICATION NO.	
20011219	JP 2003105058	A2	20030409	JP 2001-386377	
20010920	JP 3653247	B2	20050525		
	TW 593526	B	20040621	TW 2001-90123251	
20020130	US 2003120021	A1	20030626	US 2002-66455	
20040722	US 6797821	B2	20040928		
	US 2005004339	A1	20050106	US 2004-896567	
PRIORITY APPLN. INFO.:				TW 2001-90123251	A
20010920				US 2002-66455	A3
20020130					
GI					



AB The curing agents are selected from I,  
 $\text{NH}_2\text{-iQ}_1\text{C}_6\text{H}_4\text{-p-XC}_6\text{H}_4\text{-p-NH}_2\text{-jQ}_j$ ,  
 triazine derivs. II,  $\text{N}.\text{tplbond.CN:}\text{C}(\text{NH}_2\text{-jQ}_j)\text{NH}_2\text{-iQ}_i$ ,  
 $\text{Q}'\text{C}(\text{NH}_2\text{)}\text{2NHC}(\text{Q}')\text{:NH}$ ,  
 $\text{H}_2\text{NC}(\text{:NH})\text{NHC}(\text{Q}')\text{:NH}$ , and  $\text{N}.\text{tplbond.CNH}_1\text{-kQ}'\text{kC}(\text{:NQ}')\text{NH}_2\text{-iQ}'\text{i}$  [l,  
 $\text{m}$ ,  $\text{i}$ ,  $\text{j}$  =  
 $0\text{-}2$ ;  $\text{l} + \text{m} > 0$ ;  $0 < \text{i} + \text{j} < 4$ ;  $\text{k} = 0\text{-}1$ ;  $\text{i} + \text{k} < 3$ ;  $\text{Z} = \text{NH}_2$ ,  $\text{Me}$ ,  
 $\text{Ph}$ ;  $\text{X}$  =  
 direct link,  $\text{CH}_2$ ,  $\text{CMe}_2$ , cyclohexylidene,  $\text{O}$ ,  $\text{S}$ ,  $\text{SO}_2$ ;  $\text{Q} = \text{Q}'\text{CR}_1\text{R}_2$ ,  
 $\text{Q}'$ ;  $\text{Q}'$  =  
 6-oxido-6H-dibenz[c,e][1,2]oxaphosphorin-6-yl,  $\text{Ar}_2\text{P}(\text{O})$ ;  $\text{R}_1$ ,  $\text{R}_2 =$   
 $\text{H}$ ,  $\text{C}_1\text{-}18$   
 alkyl,  $\text{C}_6\text{-}18$  (un)substituted aryl,  $\text{C}_6\text{-}18$  (un)substituted  
 arylmethylene;  $\text{Ar}$   
 $= \text{C}_1\text{-}4$  alkyl- or  $\text{C}_6\text{-}18$  aryl-(un)substituted Ph or phenoxy].

Epoxy resins

containing the curing agents are useful for semiconductor device packaging.

Thus, bisphenol A was reacted with equimolar (6-oxido-6H-dibenz[c,e][1,2]oxaphosphorin-6-yl)methanol in the presence of  $\text{AcOK}$  to give

$[(6\text{-oxido-6H-dibenz[c,e][1,2]oxaphosphorin-6-yl)methyl}]$ bisphenol A,  
 228 g of which was treated with 564 g bisphenol A diglycidyl ether at

$160^\circ$  for 2 h in the presence of  $\text{Et}_2\text{PPh}_3\text{Cl}$  to give an epoxy resin.

The epoxy resin was cured with a novolak to show 5% weight loss temperature

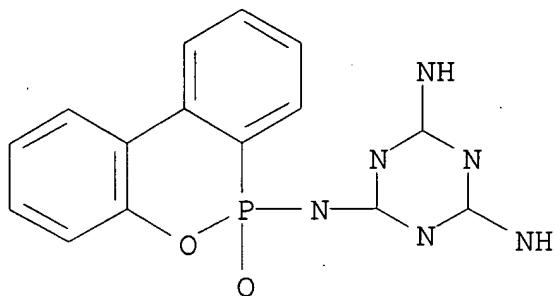
$387^\circ$  in air and N and good fire resistance.

IT 507264-76-8P 507264-78-0P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

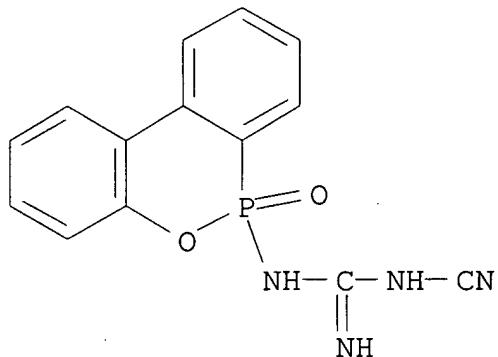
(phosphorus-containing fire-resistant curing agents for epoxy resins)

RN 507264-76-8 HCPLUS  
CN 1,3,5-Triazine-2,4,6-triamine,  
N-(6-oxido-6H-dibenz[c,e][1,2]oxaphosphorin-6-yl)- (9CI) (CA INDEX NAME)

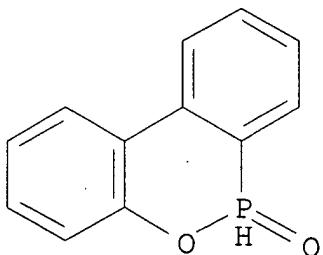


ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

RN 507264-78-0 HCPLUS  
CN Guanidine,  
N-cyano-N'-(6-oxido-6H-dibenz[c,e][1,2]oxaphosphorin-6-yl)- (9CI) (CA INDEX NAME)



IT 35948-25-5, 9,10-Dihydro-9-oxa-10-phosphaphenanthrene 10-oxide  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(phosphorus-containing fire-resistant curing agents for epoxy  
resins)  
RN 35948-25-5 HCPLUS  
CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 6-oxide (9CI) (CA INDEX NAME)



L12 ANSWER 7 OF 10 HCPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2003:134074 HCPLUS  
 DOCUMENT NUMBER: 138:321381  
 TITLE: The role of ligand transformations on the  
 performance of phosphite- and phosphinite-based palladium  
 catalysts in the Suzuki reaction  
 AUTHORS: Bedford, Robin B.; Hazelwood, Samantha L.;  
 Limmert, Michael E.; Brown, John M.; Ramdeehul,  
 Shailesh; Cowley, Andrew R.; Coles, Simon J.;  
 Hursthouse, Michael B.  
 CORPORATE SOURCE: School of Chemistry, University of Exeter,  
 Exeter, EX4 4QD, UK  
 SOURCE: Organometallics (2003), 22(7), 1364-1371  
 CODEN: ORGND7; ISSN: 0276-7333  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 138:321381  
 AB The ortho-metallated complex  $[\{Pd(\mu-Cl)\{\kappa P, \kappa C-P(OC_6H_2-2, 4-tBu_2)(OC_6H_3-2, 4-tBu_2)_2\}\}_2]$  reacts with phenylboronic acid  
 hydrate and  
 K<sub>2</sub>CO<sub>3</sub> in dimethylacetamide to give oxo-bridged diaryl phosphite  
 complex  
 $[Pd\{\kappa P, \kappa C, \kappa O-\mu_2-O-P(O)(OC_6H_2-2, 4-tBu_2)(OC_6H_3-2, 4-tBu_2)(DMAc)\}]$  (11). When the reaction is repeated in DMF, the  
 coupling product, 3,3',5,5'-tetra-tert-butyl-2,2'-biphenol (12) was  
 isolated. The reaction of palladium dichloride with phosphinite  
 PiPr<sub>2</sub>(OC<sub>6</sub>H<sub>4</sub>-4-Et) in  
 2-methoxyethanol followed by recrystn. in the presence of  
 ethanol gave the  
 palladium complex of the transesterified phosphinite ligand,  
 trans-[PdCl<sub>2</sub>{PiPr<sub>2</sub>(OEt)}<sub>2</sub>] (14). The mol. structure of 11, 12  
 and 14 was  
 confirmed by x-ray crystallog. To determine whether related  
 solvolytic

processes have an effect on catalytic activity, the performance of a range

of catalysts with "hydrolyzed" and "nonhydrolyzed" ligands was assessed in

the Suzuki coupling of aryl bromides. Palladium ortho-metatalated dimethylbenzylamine and phosphite complexes with extra hydroxyphosphinite

and secondary phosphite ligands,  $[\text{Pd}(\text{C}_6\text{H}_4\text{CH}_2\text{NMe}_2-\kappa\text{C}, \kappa\text{N})(\text{L}_1-\kappa\text{P})]$  (16,  $\text{L}_1$  = 6-hydroxy-6H-dibenzo[c,e][1,2]-oxaphosphorin),  $[\text{Pd}(\text{L}_2-\kappa\text{C}, \kappa\text{P})\text{Cl}]_2$  (3e,  $\text{L}_2$  = (2,4-di-tert-butylphenyl)(methylenebis-2,2'-(6-tert-butyl-4-methylphenyl))phosphite),

and in situ formed  $[\text{Pd}(\text{C}_6\text{H}_4\text{CH}_2\text{NMe}_2-\kappa\text{C}, \kappa\text{N})(\text{L}_2-\kappa\text{P})]$  and  $[\text{Pd}(\text{C}_6\text{H}_4\text{CH}_2\text{NMe}_2-\kappa\text{C}, \kappa\text{N})(\text{L}_3-\kappa\text{P})]$  ( $\text{L}_3$  = (hydroxy)(methylenebis-2,2'-(6-tert-butyl-4-methylphenyl))phosphite) were

tested as Suzuki coupling catalysts, showing moderate activity. In some

cases it was evident that hydrolysis plays a significant role on the

catalytic activity; however, this depends not only on the ligand, but also

on the combination of ligand and palladium precursor.

IT 512778-81-3P

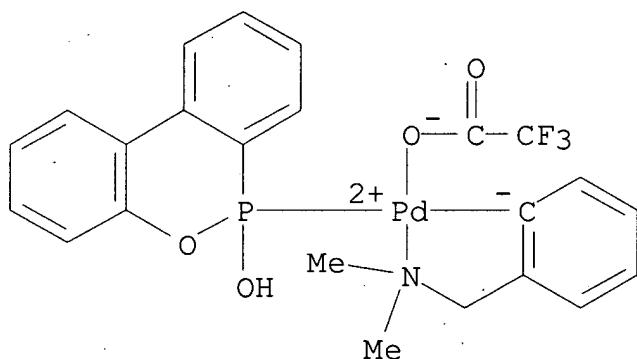
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(Suzuki coupling catalyst; preparation and Suzuki coupling catalytic

activity of palladium cyclometatalated complexes with partially hydrolyzed ligands)

RN 512778-81-3 HCPLUS

CN Palladium, [2-[(dimethylamino- $\kappa\text{N}$ )methyl]phenyl- $\kappa\text{C}$ ] (6-hydroxy-6H-dibenzo[c,e][1,2]oxaphosphorin- $\kappa\text{P}_6$ ) (trifluoroacetato- $\kappa\text{O}$ ) $^-$ , (SP-4-3)- (9CI) (CA INDEX NAME)



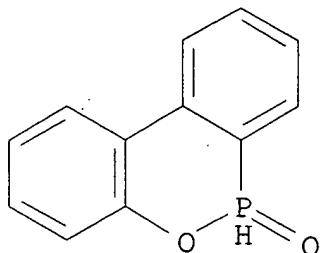
IT 35948-25-5

RL: CAT (Catalyst use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)

(Suzuki coupling co-catalyst, complexation; preparation and  
Suzuki coupling  
catalytic activity of palladium cyclometalated complexes with  
partially  
hydrolyzed ligands)

RN 35948-25-5 HCPLUS

CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 6-oxide (9CI) (CA INDEX NAME)



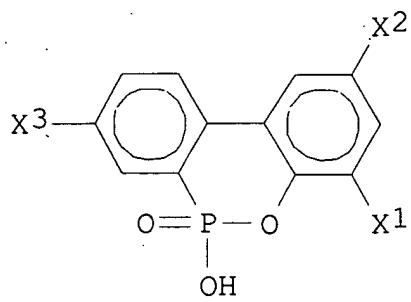
REFERENCE COUNT:  
AVAILABLE FOR THIS  
RE FORMAT

35 THERE ARE 35 CITED REFERENCES

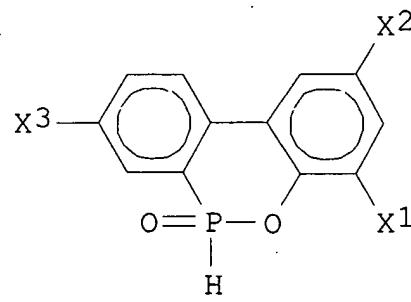
RECORD. ALL CITATIONS AVAILABLE IN THE

L12 ANSWER 8 OF 10 HCPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 2001:371569 HCPLUS  
DOCUMENT NUMBER: 134:354012  
TITLE: Synthesis of organophosphorus compounds and  
their metal salts  
INVENTOR(S): Saito, Toranosuke; Ikemoto, Kenichi; Horii,  
Hisashi  
PATENT ASSIGNEE(S): Sanko Kaihatsu Kagaku Kenkyusho K. K.,  
Japan; Saito  
Kaseihin Kenkyusho Y. K.  
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

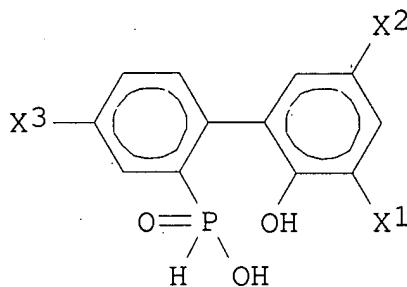
PATENT NO.	KIND	DATE	APPLICATION NO.
DATE	-----	-----	-----
-----	-----	-----	-----
JP 2001139586 19991112	A2	20010522	JP 1999-322773
PRIORITY APPLN. INFO.: 19991112			JP 1999-322773
OTHER SOURCE(S): GI	MARPAT	134:354012	



I



II



III

AB Cyclic organophosphorus compound I, useful as fire retardant and stabilizer

for polymeric electronic and optical materials, is synthesized by hydrogen

peroxide oxidation of compound II or III in the presence of water and in the

presence or absence of an inert polar organic solvent followed by dehydrocyclization (X1-3 = H, halogen, alkyl, cycloalkyl, aryl, aralkyl).

IT 36240-31-0P 69151-14-0P 121166-84-5P

RL: IMF (Industrial manufacture); PREP (Preparation)

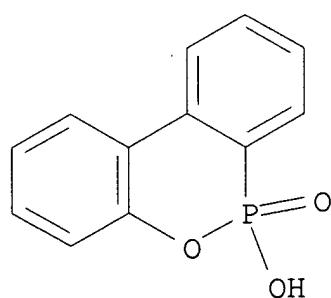
(synthesis of organophosphorus compds. and their metal salts)

RN 36240-31-0 HCPLUS

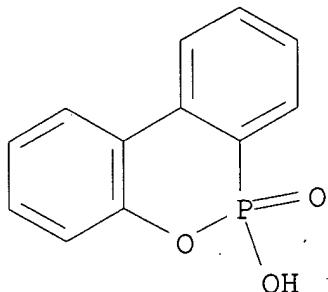
CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 6-hydroxy-, 6-oxide (9CI) (CA

INDEX

NAME)

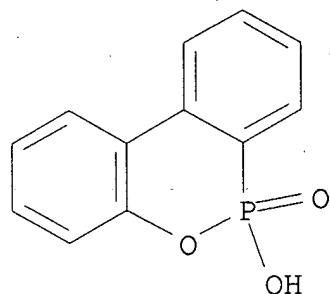


RN 69151-14-0 HCAPLUS  
CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 6-hydroxy-, 6-oxide, zinc salt  
(9CI)  
(CA INDEX NAME)



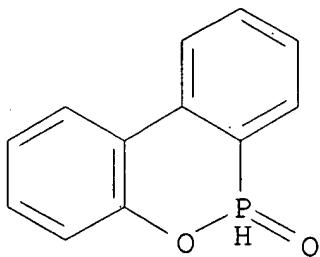
● 1/2 Zn

RN 121166-84-5 HCAPLUS  
CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 6-hydroxy-, 6-oxide, aluminum  
salt (9CI)  
(CA INDEX NAME)

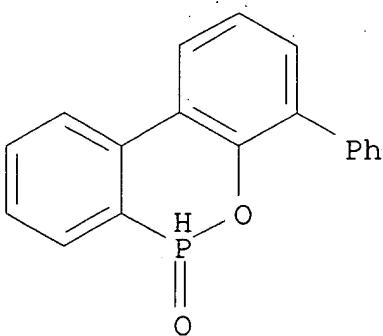


● 1/3 Al

IT 35948-25-5, HCA  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(synthesis of organophosphorus compds. and their metal salts)  
RN 35948-25-5 HCAPLUS  
CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 6-oxide (9CI) (CA INDEX NAME)



L12 ANSWER 9 OF 10 HCPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 1998:433491 HCPLUS  
DOCUMENT NUMBER: 129:149025  
TITLE: Synthesis and Characterization of Novel  
6-Substituted 4-Phenyl-6H-dibenz[c,e][1,2]oxaphosphorins  
AUTHOR(S): Qureshi, Asfia; Hay, Allan S.  
CORPORATE SOURCE: Department of Chemistry, McGill University,  
Montreal,  
QC, H3A 2K6, Can.  
SOURCE: Journal of Chemical Research, Synopses  
(1998), (7), 355, 1601-1615  
PUBLISHER: Royal Society of Chemistry  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB Novel 6-substituted 4-phenyl-6H-dibenz[c,e][1,2]oxaphosphorins  
were synthesized, starting from the reaction of 2,6-diphenylphenol  
with P trichloride using Zn chloride as catalyst.  
IT 67362-63-4P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
(Preparation); RACT (Reactant or reagent)  
(preparation of dibenzoxaphosphorins from phenols and  
phosphorus trichloride)  
RN 67362-63-4 HCPLUS  
CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 4-phenyl-, 6-oxide (9CI) (CA  
INDEX  
NAME)



IT 210899-90-4P 210899-99-3P

RL: SPN (Synthetic preparation); PREP (Preparation)

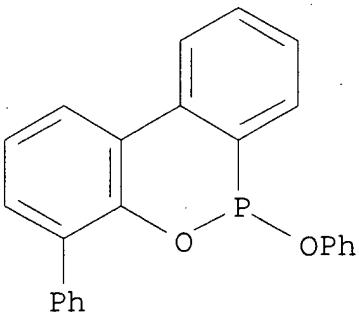
(preparation of dibenzoxaphosphorins from phenols and phosphorus trichloride)

RN 210899-90-4 HCPLUS

CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 6-phenoxy-4-phenyl- (9CI) (CA

INDEX

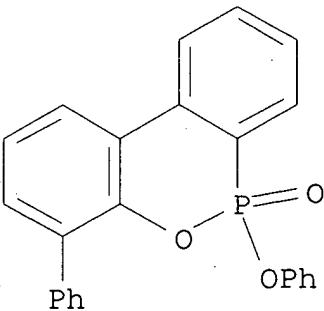
NAME)



RN 210899-99-3 HCPLUS

CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 6-phenoxy-4-phenyl-, 6-oxide (9CI) (CA

INDEX NAME)



REFERENCE COUNT:  
AVAILABLE FOR THIS

44

THERE ARE 44 CITED REFERENCES

RECORD. ALL CITATIONS AVAILABLE IN THE

RE FORMAT

L12 ANSWER 10 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 1981:157828 HCAPLUS  
DOCUMENT NUMBER: 94:157828  
TITLE: Flameproofing agent and flame-retardant  
plastic resin  
INVENTOR(S): compositions  
Saito, Toranosuke; Ohishi, Hiroyuki  
PATENT ASSIGNEE(S): Sanko Kaihatsu Kagaku Kenkyusho, Japan  
SOURCE: Ger. Offen., 36 pp.  
CODEN: GWXXBX  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

DATE	PATENT NO.	KIND	DATE	APPLICATION NO.
19800318	DE 3010375	A1	19801002	DE 1980-3010375
19790319	DE 3010375	C2	19841129	
	JP 55124792	A2	19800926	JP 1979-31162
19800125	JP 59053296	B4	19841224	
	JP 56104949	A2	19810821	JP 1980-6906
19800317	FR 2451937	A1	19801017	FR 1980-5922
	FR 2451937	B1	19830909	
19800318	BE 882283	A1	19800918	BE 1980-199839
19800318	NL 8001591	A	19800923	NL 1980-1591
19800318	NL 186961	B	19901116	
	NL 186961	C	19910416	
19800318	GB 2049696	A	19801231	GB 1980-9104
19800319	GB 2049696	B2	19830615	
	US 4317769	A	19820302	US 1980-131722
PRIORITY APPLN. INFO.:				JP 1979-31162 A
19790319				JP 1980-6906 A
19800125	AB Alkali metal or alkaline earth salts of cyclic esters of (2'-hydroxy-2- biphenylyl)phosphonic acid or its derivs. are flame retardants for			

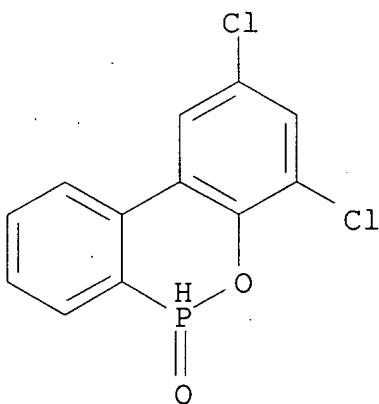
plastics. Thus, heating HOCH<sub>2</sub>CH<sub>2</sub>OH solns. of (9,10-dihydro-1,3-dichloro-9-  
phospha-10-oxaphenanthren-9-oxide [61910-28-9] with NaOH at  
170-208° for 8 h and acidification gives the corresponding cyclic  
phosphonate [76965-46-3], neutralization of which gives the Na  
salt (I)  
[76965-47-4]. Bisphenol A polycarbonate [24936-68-3]  
containing 2 phr I has  
UL-94 flammability rating V-0, compared with HB with no  
retardant.

IT 61910-28-9 72741-96-9 72741-98-1  
76964-81-3 76964-83-5 76964-85-7  
76964-96-0

RL: RCT (Reactant); RACT (Reactant or reagent)  
(oxidation of)

RN 61910-28-9 HCPLUS

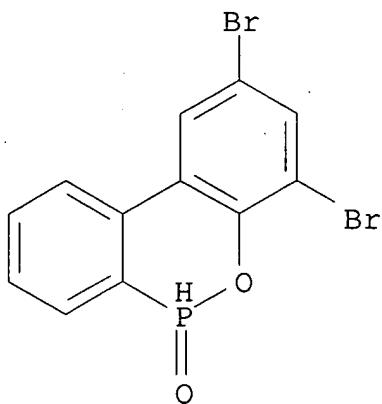
CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 2,4-dichloro-, 6-oxide (9CI)  
(CA INDEX  
NAME)



RN 72741-96-9 HCPLUS

CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 2,4-dibromo-, 6-oxide (9CI)

(CA INDEX  
NAME)

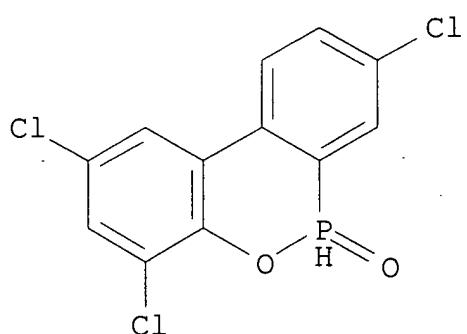


RN 72741-98-1 HCAPLUS

CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 2,4,8-trichloro-, 6-oxide

(9CI) (CA

INDEX NAME)

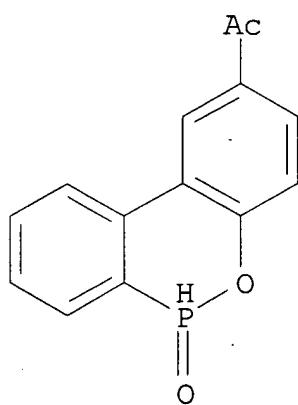


RN 76964-81-3 HCAPLUS

CN Ethanone, 1-(6-oxido-6H-dibenz[c,e][1,2]oxaphosphorin-2-yl)-

(9CI) (CA

INDEX NAME)

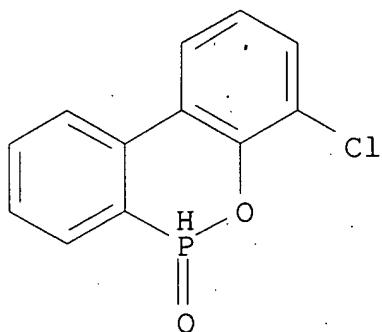


RN 76964-83-5 HCAPLUS

CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 4-chloro-, 6-oxide (9CI) (CA

INDEX

NAME)

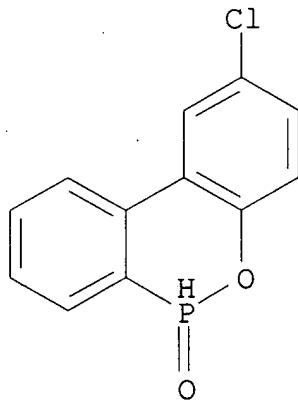


RN 76964-85-7 HCAPLUS

CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 2-chloro-, 6-oxide (9CI) (CA

INDEX

NAME)

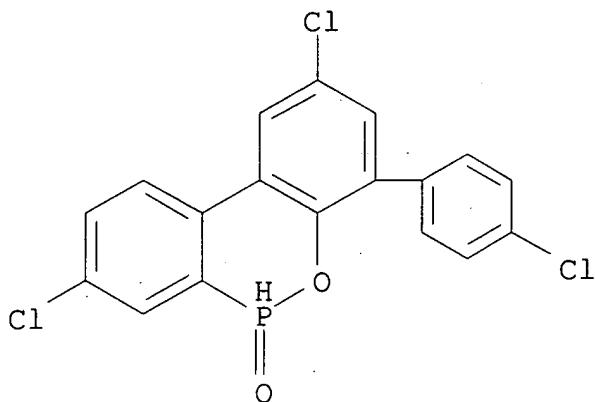


RN 76964-96-0 HCAPLUS

CN 6H-Dibenz[c,e][1,2]oxaphosphorin,

2,8-dichloro-4-(4-chlorophenyl)-,

6-oxide (9CI) (CA INDEX NAME)



IT 76964-80-2P 76964-82-4P 76964-84-6P  
 76964-86-8P 76964-88-0P 76964-89-1P  
 76964-91-5P 76964-93-7P 76964-94-8P  
 76964-95-9P 76964-97-1P 76965-46-3P

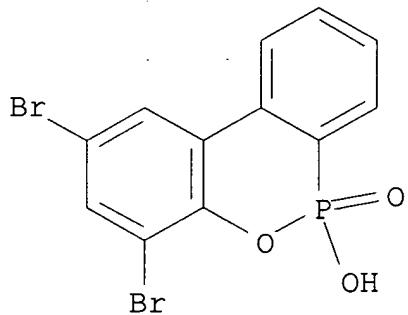
RL: PREP (Preparation)

(preparation of)

RN 76964-80-2 HCPLUS

CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 2,4-dibromo-6-hydroxy-,  
 6-oxide (9CI)

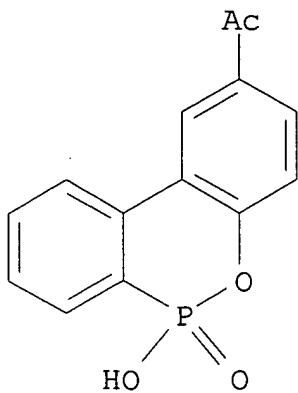
(CA INDEX NAME)



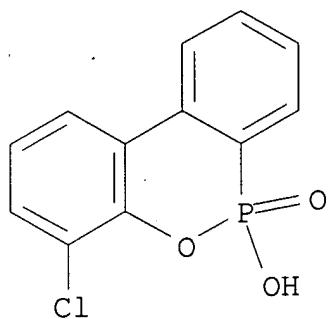
RN 76964-82-4 HCPLUS

CN Ethanone,

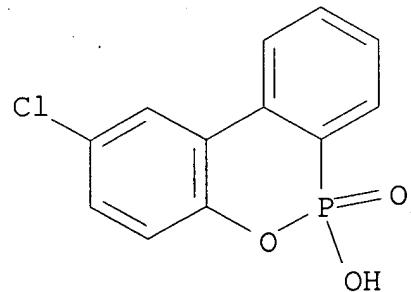
1-(6-hydroxy-6-oxido-6H-dibenz[c,e][1,2]oxaphosphorin-2-yl)-  
 (9CI) (CA INDEX NAME)



RN 76964-84-6 HCAPLUS  
CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 4-chloro-6-hydroxy-, 6-oxide  
(9CI) (CA  
INDEX NAME)

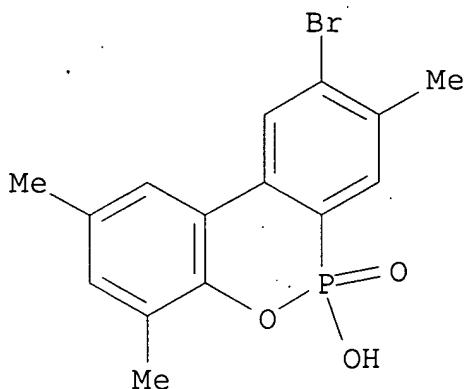


RN 76964-86-8 HCAPLUS  
CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 2-chloro-6-hydroxy-, 6-oxide  
(9CI) (CA  
INDEX NAME)



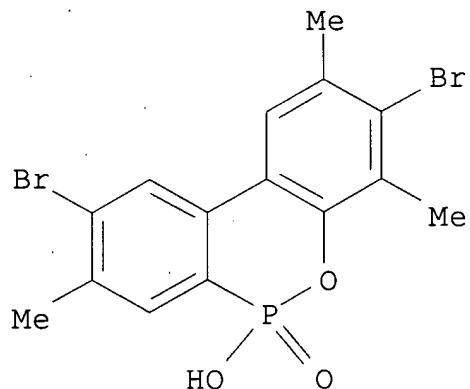
RN 76964-88-0 HCAPLUS  
CN 6H-Dibenz[c,e][1,2]oxaphosphorin,  
9-bromo-6-hydroxy-2,4,8-trimethyl-,

6-oxide (9CI) (CA INDEX NAME)



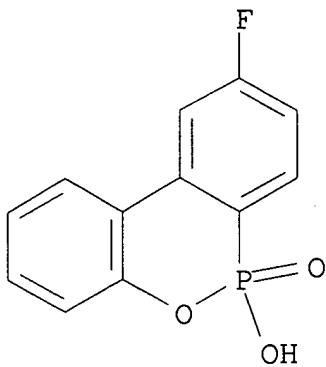
RN 76964-89-1 HCAPLUS

CN 6H-Dibenz[c,e][1,2]oxaphosphorin,  
3,9-dibromo-6-hydroxy-2,4,8-trimethyl-,  
6-oxide (9CI) (CA INDEX NAME)

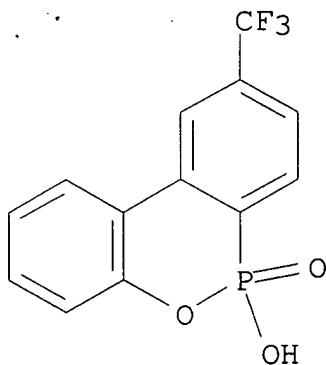


RN 76964-91-5 HCAPLUS

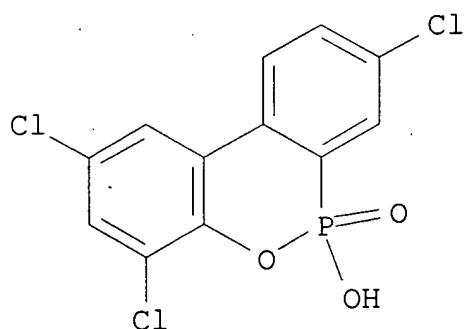
CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 9-fluoro-6-hydroxy-, 6-oxide  
(9CI) (CA  
INDEX NAME)



RN 76964-93-7 HCAPLUS  
CN 6H-Dibenz[c,e][1,2]oxaphosphorin,  
6-hydroxy-9-(trifluoromethyl)-, 6-oxide  
(9CI) (CA INDEX NAME)

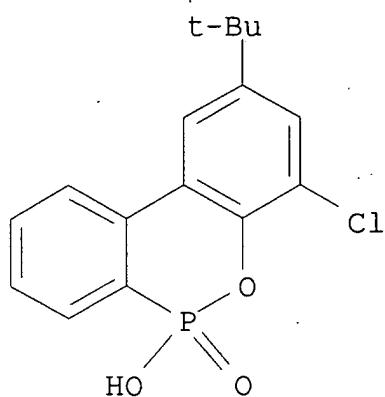


RN 76964-94-8 HCAPLUS  
CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 2,4,8-trichloro-6-hydroxy-,  
6-oxide  
(9CI) (CA INDEX NAME)



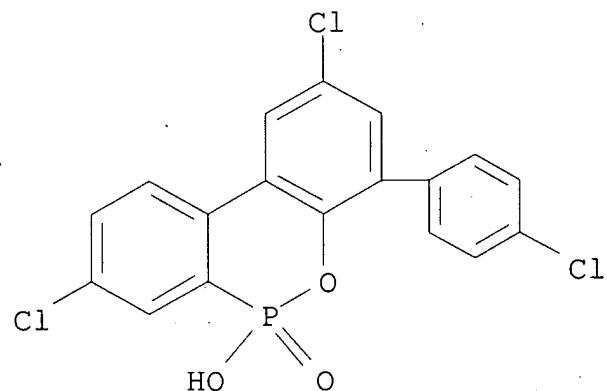
RN 76964-95-9 HCAPLUS  
CN 6H-Dibenz[c,e][1,2]oxaphosphorin,  
4-chloro-2-(1,1-dimethylethyl)-6-hydroxy-

, 6-oxide (9CI) (CA INDEX NAME)



RN 76964-97-1 HCPLUS

CN 6H-Dibenz[c,e][1,2]oxaphosphorin,  
2,8-dichloro-4-(4-chlorophenyl)-6-  
hydroxy-, 6-oxide (9CI) (CA INDEX NAME)



RN 76965-46-3 HCPLUS

CN 6H-Dibenz[c,e][1,2]oxaphosphorin, 2,4-dichloro-6-hydroxy-,  
6-oxide (9CI)  
(CA INDEX NAME)

